

### 还原和恢复 **SAP HANA** 数据库 Snap Creator Framework

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# 还原和恢复 SAP HANA 数据库

您可以使用 SAP HANA Studio 和 Snap Creator 还原和恢复 SAP HANA 数据库。

- 1. 在 SAP HANA Studio 中:
  - a. 为 SAP HANA 系统选择恢复。
  - b. SAP HANA 系统已关闭。
  - c. 选择恢复类型。
  - d. 提供日志备份位置。
  - e. 此时将显示数据备份列表
  - f. 选择 backup 可查看外部备份 ID 。
- 2. 对于仅运行集群模式 Data ONTAP 的存储系统:
  - a. 只有在使用最新备份以外的任何其他备份进行还原时才需要此备份。
  - b. 仅主存储中的 "`Volume SnapRestore` " 才需要此功能。
  - c. 停用 SnapVault 关系
- 3. 在 Snap Creator 中:
  - a. 为 SAP HANA 系统选择 "`Restore` "。
  - b. 根据主存储备份的可用性,选择从主存储或二级存储还原。
  - c. 选择存储控制器,卷名称和 Snapshot 副本名称。Snapshot 副本名称与先前的备份 ID 相关。
  - d. 对于多节点 SAP HANA 系统,需要还原多个卷:
    - i. 选择 \* 添加更多还原项 \* 。
    - ii. 选择存储控制器,卷名称和 Snapshot 副本名称。
    - ⅲ. 对所有所需卷重复此过程。
  - e. 对于多租户数据库容器( MDC )单租户数据库系统,系统和租户数据库都将还原。
  - f. 还原过程已启动
  - g. 已完成所有卷的还原。
- 4. 在数据库节点上,卸载并挂载所有数据卷以清理 " 陈旧的 NFS 句柄 " 。
- 5. 在 SAP HANA Studio 中:
  - a. 在备份列表中选择\*刷新\*。
  - b. 选择可用于恢复的备份(绿色项目)。
  - c. 启动恢复过程。
  - d. 对于多租户数据库容器( MDC )单租户数据库系统,首先为系统数据库启动恢复过程,然后为租户数 据库启动恢复过程。
  - e. SAP HANA 系统已启动。
- 6. (可选)恢复所有已还原卷的 SnapVault 关系。

在存储系统中,只有在使用最新备份以外的备份进行还原时,才需要执行此步骤。

### 从主存储还原和恢复数据库

您可以从主存储还原和恢复数据库。



(;)

您不能从 Snap Creator 还原基于文件的备份副本。

1. 在 SAP HANA Studio 中,为 SAP HANA 系统选择 \* 恢复 \*。

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SAP HANA 系统关闭。

2. 选择恢复类型并单击\*下一步\*。

i i i i i i i i i i i i i i i i i i i	Recovery of System ANA (on schanar08)	×
pecify Recovery Type		
Select a recovery type.		
Recover the database to its n	nost recent state	
O Recover the database to the t	following point in time	
Date: 2014-03-2	0] III Time 03:28:17	
Salart Time Tone USATAT A	A Partin Dautant Time	101
L IS atom time case (1997)		14
<ul> <li>System one useo (GMO)</li> </ul>	2014-09-20 10/20 17	
Recover Database to a Speci	fic Data Backup	
		Advanced >>

3. 提供日志备份位置,然后单击\*下一步\*。

ů l	Recovery of System ANA (on cishanar08)	×
locate Log Back	ups	
Specify location(s	s) of log backup files to be used to recover the database.	
Even if no log	g backups were created, a location is still needed to read data that will be used f	or recovery.
Recovery of Log	Backups	
If the log backup location. If you d the log backups	os were written to the file system and subsequently moved, you need to specify t to not specify an alternative location for the log backups, the system uses the lo were first saved. The directory specified will be searched recursively.	heir current cation where
Locations:		Add
Jus	ir/sap/ANA/HDB42/backup/log	Remove All
		Remove

您看到的可用备份列表取决于备份目录的内容。

4. 选择所需的备份并记录外部备份 ID 。

ā		Recover	ry et System ANA "Ian cishanarôti	×
Select Backup	hot, it must be available in	the data area		
Selected Point in Time Database will be recover Backups The oveniew shows back	e ed to its most recent stat kups that were recorded in	e . I the backup catalog	as successful. The backup at the top is estimated to have the shortest recovery time	
Start Time	Location	Backup Prefix	Available	
2014-03-20 02-39 47	mangidata/A265	ENAPSHOT	2 2 2 2 1 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2	
2014-03-20 01 39 47	/hanaldata/ANA	SNAPSHOT	0	
2014-03-20 00:39 47	/hana/data/ANA	SNAPSHOT	0	
2014-03-19 23 29 47	/hana/data/ANA	SNAPSHOT	0	
2014-03-19 22:39:47	/hana/data/ANA	SNAPSHOT	0	
2014-03-19 21 39:47	/hana/data/ANA	SNAPSHOT	0	
2014-03-19 20:39:47	/hana/data/ANA	SNAPSHOT	0	
Details of Selected He Start Time <sup>0</sup> 20 Size 4 Backup Name <sup>0</sup> 7h Atternative Location	m 14403-20 02:39:47 Destr 78 GB Backs ana/data/ANASNAPSH01	ation Type: SNAPSa ip ID: 1395308	aHOT External Backup ID: Backup-ANA-hourly_20140320103943	)
0			< Back Fried Sciences Cancel Comme	

5. 停用 SnapVault 关系。

只有集群模式 Data ONTAP 才需要执行此步骤。

如果需要还原的 Snapshot 副本早于当前用作 SnapVault 基本 Snapshot 副本的 Snapshot 副本,则必须先 在集群模式 Data ONTAP 中停用 SnapVault 关系。为此,请在备份集群控制台上执行以下命令:

hana::> snapmirror quiesce -destination-path hana2b:backup\_hana\_data
Operation succeeded: snapmirror quiesce for destination
hana2b:backup\_hana\_data.

hana::> snapmirror delete -destination-path hana2b:backup\_hana\_data
Operation succeeded: snapmirror delete the relationship with destination
hana2b:backup\_hana\_data.

hana::> snapmirror release -destination-path hana2b:backup\_hana\_data
[Job 6551] Job succeeded: SnapMirror Release Succeeded

6. 在 Snap Creator GUI 中,选择 SAP HANA 系统,然后选择\*操作\*>\*还原\*。

accups and Configurations and					
Profiles and Configurations	Configuration Con	ntent : HANA	_profile_ANA > AN	A_database_backuj	P
🔾 Add Profile 🛛 🦧 Refresh	🛄 Actions 🔹 🖉 R	teload   🔜 S	ave		
HANA_profile_ANA ANA_database_DR	UIN Clone	Volumes	Snapshot settings	SnapMirror settings	Snap
G ANA_database_backup	Volume Clone	2			
ANA_non_database_files_DR	Backup	8			
	Restore	30			
	Scoump	No		~	
	Archive Log	140		100	
	Chiesce				
	Mount				
	- Umount				
	a ossv				

此时将显示 Welcome to the Snap Creator Framework Restore Wizard 屏幕。

7. 单击\*下一步\*。



8. 选择\*主\*并单击\*下一步\*。

Management • 👘 Users and Roles •	🖉 Delx + 🛛 🥵 Polic	y • [* Reports	• @ mep •	& vieco
Bedupe * Configurations *				
Profiles and Configurations	Configuration Cont	ent : HANA_profil	e_ANA > ANA_database_backup	
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a 🔤 HANA_profile_ANA () ANA_database_CR	General Cornection	Volumes Snig	P.Restore	. N pageme
ANA_database_backup ANA_non_database_files_DR	Paceword Encryption Use Global config Log Files Envice Log Trace	20 30 No	Plimary or Secondary Restore Please select either primary or secondary option.	
			C Secondary	
Console	<u>k</u>		Back Cancel	

- 9. 选择从主存储还原。
- 10. 选择存储控制器,卷名称和 Snapshot 名称。

Snapshot 名称与在 SAP HANA Studio 中选择的备份 ID 关联。

Profiles and Configurations	Configuration Conf	tent : HANA_profil	le_ANA > ANA_database_backup			
Add Profile 🖉 Retrects	Attent + ( 2) Pa	iced   A Save				
HANA profile ANA	General Corrector	Volumes Street	P Restore			
<ul> <li>ANA_statutes_backup</li> <li>ANA_son_database_bles_DR</li> </ul>	Persevered Encryption Use Oktobel config	e B	Rontore Ortalia. Enter Controller Vaerner mates, Volume	Barne, Policy, Snapshot (	copy name and Restore Type.	
	Enable Log Trace	NO	Controllor/Vamiver Harter	necata		
			Westore volume memer:	484a_00001	÷	
			Policy	hourly	*	
			# Snap Creator Shapshot Copies	O All Snipshot Copies		
			Restore Snapohit copy raine:	Bacing-ANA-houry_20140	2020103942 -	
			fieutore type:	Vulume Restore		

11. 单击 \* 完成 \* 。



12. 单击\*是\*添加更多还原项。

Beoups - Configurations -								
Profiles and Configurations	Configuration Conte	nt : HANA	_profile_ANA > AN	A_databasi	e_backu	p		
🔾 Add Profile 🖉 Retresh	Actions •   @ Relo	od 📄 S	ave					
ANA_grotile_ANA	General Connection	Volumes	Snapshot settings	SnepMirror	rsetlings	Snap/wait settings	Clone settings	OnCommand/DFM
ANA_database_backup	Password Encryption:	*						
ANA_non_database_ties_DR	Use Global config.	0						
	Log Files:	30		-				
	Foshie Loo Trace	No		~				
		1992						
				1	Warnin	a		1
					On the en more	ould you like to add this configuration? fire restore operatio restore items.	more restore & Select No'to s n or 'Yes'to ad	erns lart d
						Yes	No	

13. 选择存储控制器,其他卷名称和 Snapshot 名称。

Snapshot 名称与在 SAP HANA Studio 中选择的备份 ID 关联。



- 14. 重复步骤 10 到 13 ,直到添加了所有必需的卷;在本示例中,需要为还原过程选择 data\_00001 , data\_00002 和 data\_00003 。
- 15. 选择所有卷后,单击\*确定\*以启动还原过程。

Management • A User's and Roles •	🥥 Data 🔹 🚳 Polici	• T Reports	• 🔒 Help •	8
Sachups * Configurations *				_
Profiles and Configurations	Configuration Contr	nt : HANA_profil	e_ANA > ANA_database_backup	
Add Profile Printersh     SANA_profile_ANA     ANA_distabase_DR     ANA_distabase_backup     ANA_ron_distabase_thes_DR	Actions • St New Connection Password Encryption Use Oktool config: Log Files: Enable Log Trace	volumes Srieg 20 No	Wohame Restore         You have selected to perform volume restore(s). The following volume(s) will be restored.         All data in volume data_00001 will be reverted to snapshot copy Backup-ARA-hourly_20140020103943.         All data in volume data_00002 will be reverted to snapshot copy Backup-ARA-hourly_20140020103943.         All data in volume data_00002 will be reverted to snapshot copy Backup-ARA-hourly_20140020103943.         All data in volume data_00002 will be reverted to snapshot copy Backup-ARA-hourly_20140020103943.         All data in volume data_00002 will be reverted to snapshot copy Backup-ARA-hourly_20140020103943.         All data in volume data_00002 will be reverted to snapshot copy Backup-ARA-hourly_20140020103943.         All data in volume data_00002 will be reverted to snapshot copy Backup-ARA-hourly_20140020103943.         Perform any precequisite steps for application restores.         All outrent data in the above volume(s) will be load. Oki 'XX' to perform the restore(s).	×
	-		OK Cancel	

此时将启动还原过程。

#### 🎤 Management 🔹 🍰 Users and Roles 🔹 🎯 Data 🔹 🧠 Policy 🔹 📳 Reports 🔹 🚱 Help 🔹

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A Adv Profe   A Adv Profe  A Adv Serbe   A Adv Serbe  Adv Serbe	Profiles and Configurations	Configuration Content : HANA_profile_ANA > ANA_database_backup	
Alk_porting_AlkA     AlkA_porting_AlkA     AlkA_porting_AlkA     AlkA_porting_Backage Conception of the set of t	🔾 Add Profile 🛛 😂 Refresh	Actions - 12 Relation - Save	X Close
VM. dabbase, backup         VM. dabbase, back	HANA_profile_ANA     ANA_database_DR	Ceneral Connection Volumes Snapshot settings Snapshot settings Snapshot settings Snapshot settings Connection Volumes SAP HANA Agent) Event settings Commands	
ANA_non_database_Bie_DR Use Obdationfp: Us	ANA_database_backup	Password Encryption:	
Image:         10           Image:<	ANA_non_database_files_DR	Use Global config :	
Inde tog Trace:     Inde tog Trace: <td></td> <td>Log Files: 30</td> <td></td>		Log Files: 30	
<pre></pre>		Enable Log Trace: No 🗸	
logs           3           Appent validation completed successfully for agent localhost:000           4           4           5           9           10           11           12           12           13           13           14           15           15           16           16           17           17           18           18           18           18           18           18           18           18           18           18           18           18           18           18           18           18           18           19           18           18           18           18           18           18           18           18           18           18           18           18           18 </th <th>Console HANA_profile_AI ×</th> <th>٢</th> <th></th>	Console HANA_profile_AI ×	٢	
3 Agent validation completed successfully for agent localhost:9090 4 FURTIONE Flugin validation furtient flugin validation furtient for the furtient flugin validation completed successfully for plugin hana 5 Plugin validation completed successfully for plugin hana 6 FURTIONE Flugin validation completed successfully for plugin hana 7 FURTIENT Resorce ExtendedRepositoryRecord Id set: 113 FURTIENTS 8 FURTIENT Resorce commands #fURTIENTS 9 For restore commands are not defined 9 For restore commands are not defined 9 Furtient Restore furtient fluging for plugin; hana 10 Extended RepositoryRecord fluging for plugin; hana 11 For Restore handling for plugin; hana 12 Excente handling for plugin; hana finished successfully 4 ####################################	Logs		
<ul> <li>4 ####### Plugin validation #########</li> <li>4 ####################################</li></ul>	3 Agent validation completed	successfully for agent localhost:9090	
<ul> <li>S Jugin validation completed successfully for plugin hana</li> <li>Filessing Restore Record id Tinder Sitting File</li> <li>Filessing Restore Record id Tinder Sitting File</li> <li>Filessing Restore Record id Sitting File</li> <li>Filessing Restore Record Sitting File</li> <li>Filessing Filessing File</li> <li>Filessing Filessing Filessing File</li> <li>Filessing Filessing Filessing Filessing Filessing Files</li> <li>Filessing Filessing Filessing</li></ul>	4 ########## Plugin validatio	on #########	
<ul> <li>6 ######### Running Restore Record id Finder ####################################</li></ul>	5 Plugin validation completed	d successfully for plugin hana	
7 ######### Restore ExtendedRepositoryRecord Id set: 11 ##################################	6 ########## Running Restore	Record id Finder ##########	
8 ######### Pre Asstore commands ####################################	7 ########## Restore Extended	dRepositoryRecord Id set: 113 ##################################	
<ol> <li>Pre restore commands are not defined</li> <li>Interfactor of the Restore Restore SISSISSIES</li> <li>Interfactore handling for plugin: hana</li> <li>Ilocalhost:9090 (4.1.1.1) Application specific restoreFre operation is not yet implemented for this plugin</li> <li>Pre Restore handling for plugin: hana finished successfully</li> <li>Interfactore handling for plugin: hana finished successfully</li> </ol>	8 ########## Pre Restore comm	eands ##########	
10 FURTHER Application Fre Mestore Furthers 11 Pre Restore handling for plugin: hans 12 [localhost:9090 (4.1.1.1)] Application specific restoreFre operation is not yet implemented for this plugin 13 Pre Restore handling for plugin: hans finished successfully 4 ####################################	9 Pre restore commands are no	of defined	
[1] Pro Restore Annotating for plugin: Anno [2] [localhost:9090 (4.1.1.1)] Application specific restoreFre operation is not yet implemented for this plugin [3] Pro Restore handling for plugin: hana finished successfully 4 ####################################	10 Pre Destore handling for all	ARE LOCE RESERVENT	
Pre Restore handling for plugin: hana finished successfully     ################################	12 (localboat 9090 (4.1.1.1))	avgain, meme	
4 ######## Application Fre Restore finished successfully #########	13 Pre Restore handling for pl	Jugin: hana finished successfully	
	14 Application Pre	Restore finished successfully #########	

请等待还原过程完成。

16. 在每个数据库节点上,重新挂载所有数据卷以清除陈旧的 NFS 句柄。

在此示例中,所有三个卷都需要在每个数据库节点上重新挂载。

mount -o remount /hana/data/ANA/mnt00001
mount -o remount /hana/data/ANA/mnt00002
mount -o remount /hana/data/ANA/mnt00003

17. 转到 SAP HANA Studio 并单击 \* 刷新 \* 以更新可用备份列表。

6		Recevery	( of System ANA (on cishanar08)	×
Select Backup				
To recover this snaps!	hot, it must be available in the	data area.		
Selected Point in Time Database will be recover Backups The overview shows back	e ed to its most recent state kups that were recorded in th	e backup catalog a	is successful. The backup at the top is estimated to have the shortest recovery time.	
Start Time	Location	Backup Prefix	Available	10
2014-03-20 02 30 47	manaldatalAdek	SNAPSHOT		
2014-03-20 01 39 47	/hana/data/ANA	SNAPSHOT	0	
2014-03-20 00:39:47	/hana/data/ANA	SNAP	Find Data Backups (en cishanari@) ×	-
2014-03-19 23:39:47	/hana/data/ANA	SNAP O	Waiting for response from SAP HANA database	
2014-03-19 22:39:47	/hana/data/ANA	SNAP		
2014-03-19 21 39 47	/hana/data/ANA	SNAP		
2014-03-19 20:39 47	/hana/data/ANA	SNAP		1
Details of Selected He Start Time Size Backup Name Alternative Location	m Destination Type Backup ID		ways ryn in background Cancel Qetails >> [Run in Background]	
0			< Back Dist > Cancel Error	

使用 Snap Creator 还原的备份在备份列表中显示绿色图标。

18. 选择备份并单击\*下一步\*。

6		Recover	y of System i	ANA (on cishanar08)	×
Select Backup					
Select a backup to reco	ver the SAP HANA databa	ise			
Selected Point in Tim Database will be recover Backups The overview shows bac	e red to its most lecent stati kups that were recorded in	e. I the backup catalog	as successful	ul. The backup at the top is estimated to have the shortest recovery time.	
Start Time	Location	Backup Prefix		Available	-
2014-03-20 02 39:47	manaldatalANA	SNAPSHOT	-		
2014-03-20 01 39 47	/hana/data/ANA	SNAPSHOT	0		
2014-03-20 00 39:47	/hana/data/ANA	SNAPSHOT	0		
2014-03-19 23:39:47	/hana/data/ANA	SNAPSHOT	0		
2014-03-19 22:39:47	/hana/data/ANA	SNAPSHOT	0		
2014-03-19 21:39:47	/hana/data/ANA	SNAPSHOT	0		
2014-03-19 20 39:47	/hana/data/ANA	SNAPSHOT	0		~
Details of Selected He Start Time <sup>0</sup> 20 Size 4 Backup Name /h Alternative Location <sup>0</sup>	m 114-03-20 02:39:47 Destin 78 GB Backu ana/data/ANASNAPSH07	ation Type: SNAPSk p ID: 1395308	40T 387610	External Backup ID: Backup-ANA-hourly_20140320103943	iow More
			2	Dec.4	and an other
3				< gack Next > Cancel	

19. 根据需要选择其他设置,然后单击\*下一步\*。

í -	Recovery of System ANA (on cisbanar08)	×
Other Settings		
Ensure that the snapsho	ot is available in the SAP HANA system.	
Check Availability of Los	g Backups	- 0
You can have the syste they will be listed and to performed but later in the backups.	Im check whether all required log backups are available at the beginning of the recovery process. If log backups are missing, the recovery process will stop before any data is changed. If you choose not to perform this check now, it will still be he process. This may result in a significant loss of time if the complete recovery must be repeated due to missing log	
Check the availability of	If log backups stored in the relevant location(s).	
File System		
Third-Party Backup	) Tool (Backint)	
Initialize Log Area		5
If you do not want to rea	scover log entries residing in the log area, select this option. After the recovery, the log entries will be deleted from the log	
🗌 Initialize Log Area	0	
Install New License Key	ý	
If you recover the datab You can	pase from a different system, the old license key will no longer be valid	
- Install a new license k	key manually after the database has been recovered	
Install New License	i Key	
1	Brown	
		1
		-
3	< Back Next> Cancel Erroll	

20. 单击 \* 完成 \* 。

	Recovery of System ANA (on cishanar08)
leview Recovery Settings	
Review the recovery settings and choo	se 'Finish' to start the recovery. You can modify the recovery settings by choosing Back'
System Information	
System. Host Version	ANA cishana08 1 00 70 386119
Recovery Definition	
Recovery Type:	Snapshot (Point-in-Time Recovery (Until Nowi)
Backup ID	1395308387610
Backup Start Time:	2014-03-20 02:39:47 (Pacific Standard Time)
Log Backup Location	/usi/sap/ANA/HDB42/backup/log
Initialize Log Area	No
Check Availability of Log Backups	(Yes
Configuration File Handling	
6 ATTENTION	
If you want to recover customer-sp- if you are pertorming a recovery to Note that the target system and th must be the same in both systems More information: SAP HANA Adm	icrific configuration changes, you may need to make the changes manually in the target system. a different system e source system must have the same configuration. In particular, the number of database services with their own persistency inistration Guide
0	S Back (Ment 2) Cancel Envish

#### 恢复过程开始。

9	Receivery of System ANA: Ian cishanardoi	
Recovery Progress Information		
Prepare Recovery - Stopping System		
Hest: cishanar08		
Recovery of host cishana/OF pending		
Hest: cishanar10		
O Recovery of host 'cishanar10' pending		
Host cishanari1		
Recovery of host 'cishanar11' pending		
0		
w.		2

21. 恢复完成后,根据需要恢复 SnapVault 关系。

	Recovery at	System ANA (In cohanard)	
Recovery Execution So	mmary		
i System ANA rece	rered.		
12 volumes were rec	wered		
Recovered to Time:	Mar 20, 2014 3 27 54 AM GMT-07 00		
Recovered to Log Po	ubon 71030648		
		2	
3			(

### 从二级存储还原和恢复数据库

您可以从二级存储还原和恢复数据库。

1. 在 SAP HANA Studio 中,为 SAP HANA 系统选择 \* 恢复 \* 。

				THE REPORT OF A		HARA .				
East Navepate	Dillet, Weiter	ti+ly								
						N	1 23	S DAP H	NoA Administration Consume 🖉 UNICO	yche Marca
Systems #	· ·	ANA ISYSTEM	D ANA 11							- 0
II · = 4	5 . Dag	KUD ANA (SYS	TEM ANA						Last Update 12:29 54 AM	
	Owner	v Custovatora	Barlon Catalon							
Annual contractor		Patrice.	marriel cannot			Barbara Barbara				1
Aller Al	tt jystem.						where we have	and an		_
OCAL N	of System Archee Lin	×					1,000,0400,0	96221		
D Con A	et Adettimel (gaar		· Duratier	Size Backup Type	Destination Typ	Status	Successio			
Chillion and a			3 47 00H 00m 12s	5.62 GB Data Bachig	Snapshot.	васкор тури	Data Back	19 C		
- 545 BI M	and the second second		8-47 00N-00m 12s	3.00 GB Data Backup	"Enapshot	Desputition (VDe	Seafrante	lana ar		
	Anten Daher sone		47 6 00h 00m 13s	5 01 GB Data Barrag	Shapshot	STATING	Apr 3, 201	4 11 00:04 A5	(AmericaCos_Angeles)	
	ten Setment		#7.E 00h 00m 13a	4.37 GB Data Bachup	Srapshit	Finance	Apt 3, 201	A TE DO TE AN	(Aumerca/101_Auderent)	
	No. org		47.8 008-00# 121	4.80 GB Data Bachup	Staystur	Christon	OON COPE 1	29		_
ETT T	outs postant.		47.8 00h.00m 134	1 CO GB Data Balkus	Grapenie -	50#	4.76 GB			
Di Te	Contract Manual Annual		47 F 00h 00m 129	1 00 GB DATA BACKIE	Shapahar	Throughput.	n.a.	ALANIA DOLL	Management -	10
	Actual a Manufacture and		40° # 008 00m 121	E OF GB   Data Backup	Stapend.	0.111111	an rear of	an an a start a		14
0	san Memory Dennes		43 E 006 00m 124	S of OB Data Backup	Support	Additional Information	1 1000			- 22
0	ent Resource Unicote		al a con com 174	5.01 08 049 89094	Stapone		100			18
			1/1 000 00m 425	S OF COLORS DISCUS	Sugaran .	Location	hanadata	ANA/www.0000	MA C	10
12.0	1. The		and one does hits	T OD OD Data Balting	. stapping					
Ba 50	1p		here our own the	E OF OR Data Backer	- Stapona	inter Ter			100	
	estart		1/64 (000 (0000 124	A 20 GB   Data Backet	Lagender	richanalth an	teres a	70.00.549	Backup Allik saly 20140401030000	x
	10.2	Tables.	the sectors the	A THE DAY BUILD	and the second second	consults and	herbenne	DO N ME	Barran Alah dahi 2014040300000	
	ees.	Create Street	3 84 009 00m 12s	4.49 GB Data Bacha	Staphot	ostanatili ma	Straaher	257 16 640	Backup Aluk sany 20140400200008	
200	rheiti	15	55.4 00h 00m 17a	4 12 GD Data Bacture	644	cistanar00 mil	hermanner	226 20 140	Backup-AluA saly 2014040300000	0
			- Hand Steeler Mone	UNITED STOLEN AND ADDRESS OF	4175	cishanardii ata	Automation	1 26 68	Backup AtuA saly_20140403200000	8
- 14	10.04					oshanarde xs	angest .	45.03 MS	Backup-Alid-sary 20140403200000	
12 50	OL Cértisia					oshanar10 ind	BAX54FMBT	125-27 MB	Backup ANA skiy 20140403200000	
(5.14	nd Table					cishanart0 ex	anterna .	104.27 MB	Backup-AliA-Baly_20140403200000	6
-						cishanar10 ec	hochever	325.09 MB	Bachup-AlsA-staly_20140403200000	
P1	ngefæi.	AdvEnter				oshana11 ind	Masener	224.83 MB	Backup AleA saty 2014040020000	
						cistanar11 ini	An example of the second s	122 61 148	Backup-AHA-660y_20140400200000	
						coharartt and	boxumer .	324 41 689	Backup ANA saly_20140403200000	6 I.

SAP HANA 系统将关闭。

2. 选择恢复类型并单击\*下一步\*。

Ú.	Recovery of System ANA (on cishanar08)	,
specify Recover	у Туре	
Select a recovery	r type.	
Recover the	database to its most recent state	
O Recover the	database to the following point in time <sup>6</sup>	
Date:	2014-04-07 Time [00:44-72]	
Select time I	one (1GM1-07.00) Pacific Daylight Time	10.]
1 System	ime used (GMT) 2014-04-07.07.44-22	
O Recover Dat	abase to a Specific Data Backup <sup>0</sup>	
	12	Advanced >>
0	Suck Next>	Cancel Einish

3. 提供日志备份位置,然后单击\*下一步\*。

6	Recovery of System ANA (on cishanar08)	×
Locate Log I Specify local	Backups ion(s) of log backup files to be used to recover the database.	
Even if n Recovery of If the log ba location if y the log back	o log backups were created, a location is still needed to read data that will be use Log Backups ckups were written to the file system and subsequently moved, you need to speci you do not specify an alternative location for the log backups, the system uses the cups were first saved. The directory specified will be searched recursively.	d for recovery. fy their current location where
Locations		Add
	/usr/sap/ANA/HDB42/backup/log	Remove All
		Remove
•	< Back Next Cancel	Einish.

此时将根据备份目录的内容显示可用备份列表。

4. 选择所需的备份并记下外部备份 ID 。

6		Recovery of 5	iyatem ANA	on cishana (08)		*
Select Backup O To recover this snaps	not, if must be available in the d	lata area				
Selected Point in Time Database will be recover Backups The overview shows back	e ed to its most recent state. kups that were recorded in the l	backup catalog i	is successful	The backup at the top	is estimated to have the shortest	recovery time
Start Time	Location	Backup Prefix			Asailable	*
2014-04-05 11:00:04	/hana/data/ANA	SNAPSHOT	0			
2014-04-05 11 00:04	/hana/data/ANA	SNAPSHOT	0			
2014-04-04 11 00.04	/hana/data/ANA	SNAPSHOT	0			
2014-04-03 11 00:04	mana/data/ANA	SNAPSHOT				
2014-04-02 11:00:04	/hana/data/ANA	SNAPSHOT	0			
2014-04-01 02 18:55	Ausi/sap/ANA/HDB42/backu	COMPLETE_D	0			
Details of Selected He Start Time <sup>9</sup> 20 Size 4 Backup Name <sup>9</sup> /h Alternative Location <sup>9</sup>	m 14-04-03 11:00:04 Destination 76 GB Backup ID: ana/data/ANASNAPSHOT	Type: SNAPSH 13965480	10 <b>T</b> 104221	External Backup IC	Refres	h Show More
	\$				Įe	no: Aontroy
0				< Back	Cancel	Enish

5. 转到 Snap Creator GUI。

6. 选择 SAP HANA 系统,然后单击 \* 操作 \* > \* 还原 \* 。

Configurations To Backups To Job Mor	hitor 🗵				
Profiles and Configurations	Configuration Co	ntent : HANA_	profile_ANA > ANA_	_database_backup	
🔘 Add Profile 🛛 🧬 Refresh	🚺 Actions 🔹 👸	Reload   📄 Sa	ive		
HANA_profile_ANA ANA_database_DR	a LUN Clone	Volumes	Snapshot settings	SnapMirror settings	SI
ANA_database_backup	Volume Clone		Backup-ANA		1
ANA_non_database_files_DR	Backup				
	scdump     Discover		Use Policy	Use Policy Object	
	Archive Log	cies			
	Quiesce	olicy Name	Retention		
	Mount	ourly	12		
	Junount	lailly	3		
	a ossv	veekly	0		
		monthly	0		

此时将显示欢迎屏幕。

digurations * Backups * Job Mo	nitor 15			
Profiles and Configurations	Configuration Co	ontent : HANA_	profile_ANA > ANA_da	abase_backup
Add Profile 🖉 Netresh	Actions - 3	Reload   📑 te	eve -	
MANA_profile_ANA	Oeneral Connects	on Volumes	Seager PRestore	
J ANA_didabase_backup	Snapshot copy Nam	έ.	Dic	😥 Welcome
ANA_ron_database_tiles_DR	Snepshot copy Labe	e.		Welcome to the Shap Creator Framework Restore Wizard
	Policy Type			The restore wizard helps you to perform Volume Restore, Single File Restore, or SnapVault Restore on the selected configuration.
	Snapshot copy P	Policies		
	Enable Policy	Policy Name		
	8	hourty	4	
	8	delly	1	
	0	weekly		
	0	morthiy	4	
	Prevent Snepshot or	opy Deletion	No	
	Policy Retention Age	e.		
	Naming Convertions		01	
	Consistency Group	06	(E)	
			- Print	

7. 单击 \* 下一步 \* 。

8. 选择 \* 二级 \* 并单击 \* 下一步 \* 。



9. 输入所需信息。Snapshot 名称与在 SAP HANA Studio 中选择的备份 ID 关联。

Configurations * Backupe * Job Mo	ntor *							
Prolites and Configurations	Configuration	Content : HANA	profile	ANA > ANA_database_backup				
🔾 Add Profile 🕺 Refresh	🔯 Actons • 🖉 Nelosd 📄 Save							
ANA_sette_ANA	General Connection Volumes		Snape	2 Restore				
ANA_detabase_backup Snapshot co		ene .	Bac	Snap Vault Restore				
ANA_non_database_files_DR	Shepshot copy Le	det :		Criter ortals briow to start a snapt aut	NET THE REAL			
	Dates Tune		-					
	Force of the		120	Policy	daily	*		
	Snapshot copy Policies			Secondary controller name.	hana2b	*		
	Enable Policy	Policy Name	1	Secondary volume name. Snap Creator Snapshot Copies	backup_date_00001	*		
	8	hourly	1		s O All Snapshot Copies			
	8	dely		Secondary Snapphot copy name	Backup-ANA-SV_dely_20140403200	( <del>`</del> ~		
	a	weekly		Source path on secondary.	Arol/backup_dista_00001/mre00001	×		
				Destination path on primary:	Avoildate_00001.mr#000001			
	-	morexy	-					
	Prevent Snapshot	copy Deletion:	No					
	Policy Retertion Arm		1					
		574 201						
	Naming Conventio	n.	01					
	Consistency Orou	e	100					
			-		-	T ASSA		

10. 选择\*完成\*。

Ingurations A Backpi A 300 Mor	apor =				
Probles and Configurations	Configuration	Content : HANA	profile_A	ANA_database	_backup
Add Profile 🖉 Patresh	Actions + 1	Treload   📑 S	eve		
HANA_profile_ANA	General Connect	ton Volumes	Snape 🗡	tore	
ANA_database_backup	Shapshot copy Na	ene.	Dec		Summary
ANA_non_database_files_DR	Snapshot copy La Policy Type	bet			Restore type : Snap/Yault Restore Secondary controller name : hana2b Secondary volume name : backup_data_00001
	Snapshot copy Policies				Secondary Snapshot copy name (Backup-ANA- SV_daily_20140403200000
	Enable Policy	Policy Name	ne // Sol	Source path on secondary : hol/backup_data_00001/mint00001	
	8	hourly	- 1		Destination path on primary : Api/data_00001/mr/t00001
	8	dały	3		After clicking the Finish button you can select additional
	8	weekly	- 6		Shapvaud relation ships to restore.
	0	monthily	5		
	Prevent Snapshot copy Deletion Policy Retention Age		(No)		
	Naming Convention:		01		

11. 单击\*是\*添加更多项以进行还原。

Configurations * Backups * Job Mo	nkor *							1			
Profiles and Configurations	Configuration	Content : HANA	_profile_ANA > ANA_	database_backup							
🔾 Add Profile 🖉 Retresh	Actions + 1.5	Report I int									
# THANA_profile_ANA	General Connection Volumes		Snepshot settings SnepMirror settings		SnepVeut settings	Clone settings	OnCommand@FM	Arct			
ANA_sidabase_backup	Shepshot copy Ne	ne	Backup-ANA								
S ANA_ron_database_files_DR	Shapshot copy Label										
	Policy Type:										
	Snapshot copy Policies										
	Enable Policy Policy Name		Refertion	Warning	Duite						
	8	hourly	12	😔 Wou	ould you like to add more restore items		hs.				
	8	dely	2	on this configuration? Select No'to start the entire restore operation or Yes' to add		đ					
	0	weekly	0	more re	store dems.	Nii 1492.948-501					
	8	northiy	0		Ves	No	-				
	Prevent Snapshot copy Deletion Policy Retention Age		No	¥	1						
		Naming Convention		Recent * Timestamp							
	Naming Convention	*	C Recent * Ti	mestamp							
	Naming Convention	τ	© Recent * Ti	mestamp				-			

12. 为需要还原的所有卷提供所需信息。在设置 data\_00001 中,需要为还原过程选择 data\_00002 和 data\_00003 。

Anapotent • 👘 Users and Roles •	🍚 Data 🔹 🦓	Policy - P	reports	* (g) Help +
Configurations * Bockups * Job Mo	ntor =			
Profiles and Configurations	Configuration	Content : HANA,	profil	e_ANA > ANA_database_backup
Add Profile	Actions + B Reload Save     General Connection Volumes Snaps     Snapshot copy Labet     Policy Type     Snapshot copy Policies			SnapYault Restore         K           You have selected to perform Snap/Yault restore(s). The following file(s) will be restored.         K           The file have2ts Avoitbackup_data_00001.inve00001 in snapshot Backup-AVA-SV_daily_20140403200000 will be restored to hana1a Avoitback_00001.inve00001.         K
				The file hana2b Av&backup_diste_00002/innt00002 in snapshot Backup=AVA-SV_delty_20140403200000 v be restared to hana1b Av&Back_00002/ent000022. The file hana2b Av&backup_diste_00003/ent000003 in snapshot Backup-AVA-SV_delty_20140403200000 v
	Enable Policy	olicy Policy Name hourly		De restored to have te Arolitete_000003ient000003
	0	weekty monthly	- 33	
	Prevent Snapshot copy Deletion No Policy Retention Age		No	
	Naming Convention	90)	0	Perform any prorequisite steps for application restore.
	Consistency Group	p.	8	Click 'Ok' to perform the restore(s).
- Country			_	OK Cancel

13. 选择所有卷后,选择\*确定\*以启动还原过程。

请等待还原过程完成。

14. 在每个数据库节点上,重新挂载所有数据卷以清理 "SNFS 句柄 "。

在此示例中,所有三个卷都需要在每个数据库节点上重新挂载。

mount -o remount /hana/data/ANA/mnt00001
mount -o remount /hana/data/ANA/mnt00002
mount -o remount /hana/data/ANA/mnt00003

15. 转到 SAP HANA Studio 并单击 \* 刷新 \* 以更新备份列表。

<b>a</b>		Receivery at Sys	stem ANA (	en custanar08)		×
Select Backup Select a backup to reco	ver the SAP HANA database					
Selected Point in Time Database will be recover Backups The overview shows back time.	e ed to its most recent state. kups that were recorded in the	backup catalog a	is successfu	i. The backup at the top	o is estimated to have the shortest	recovery
Start Time 2014-04-06 11 00:04	Location //nana/data/ANA	Backup Pretx SNAPSHOT	U		Avaitable	
2014-04-05 11:00:04	/hana/data/ANA	SNAPSHOT	0			
2014-04-04 11:00:04	/hana/data/ANA	SNAPSHOT.	0			
2014-04-03 11:00:04	/hatia/data/ANA)	SNAPSHOT				
2014-04-02 11:00:04	/hana/data/ANA	SNAPSHOT.	0			
2014-04-01 02 18:55	/usr/sap/ANA/HDB42/backu	COMPLETE_D	0			
0		40				
Details of Selected He Start Time <sup>10</sup> 20 Size 4. Backup Name /hs	m 114-04-03 11:00:04 Destination 76 GB Backup ID ana/data/ANASNAPSHOT	Type SNAPSH 13965480	IOT 04221	External Backup ID:	Refresh Backup-ANA-daily_201404032000	Show More
Alternative Location <sup>0</sup>					Check	Analatisty]
0				< Back	Next> Cancel	Extention (

16. 使用 Snap Creator 还原的备份在备份列表中显示绿色图标。选择备份并单击\*下一步\*。

17. 根据需要选择其他设置,然后单击\*下一步\*。

6	Recovery at System ANA (on cishanar08)	
Other Settings		
Ensure that the snapshot is av	stable in the SAP HANA system.	
Check Availability of Log Back	ups	- 0
You can have the system che listed and the recovery proces This may result in a significar	It whether all required log backups are available at the beginning of the recovery process. If log backups are missing, they will be s will stop before any data is changed. If you choose not to perform this check now, it will still be performed but later in the process t loss of time if the complete recovery must be repeated due to missing log backups.	
Check the availability of log br	ckups stored in the relevant location(s)	
File System		
Third-Party Backup Tool (	(ackint)	
Initialize Log Area		5
If you do not want to recover I	og entries residing in the log area, select this option. After the recovery, the log entries will be deleted from the log area	
🗆 Initialize Log Area		
Install New License Key		5
If you recover the database for	m a different system, the old license key will no longer be valid	
- Select a new license key to	nstall now	
- install a new license key ma	sually after the database has been recovered	
Install New License Key		
1	Revie	
		1 T
(75)		

18. 单击 \* 完成 \* 。

a	Receivery of System ANA: (on cishanar08)
Review Recovery Settings	
Review the recovery settings and choo	se 'Finish' to start the recovery. You can modify the recovery settings by choosing 'Back'.
System Information	
System Host Version	ANA cishanar08 1 00.70.386119
Recovery Definition	
Recovery Type	Snapshot (Point-in-Time Recovery (Until Nowi))
Backup ID	1396548004221
Backup Start Time:	2014-04-03 11:00:04 (Pacific Standard Time)
Log Backup Location	/usi/sap/ANA/HDB42/backup/log
Initialize Log Area	No
Check Availability of Log Backups	Yes
Configuration File Handling	
ATTENTION	
If you want to recover customer-spi If you are performing a recovery to Note that the target system and th own persistency must be the same More Information: SAP HANA Adm	icific configuration changes, you may need to make the changes manually in the target system. a different system e source system must have the same configuration. In particular, the number of database services with their in both systems inistration Guide
0	Rack Cancel Einish

恢复过程开始。

	Recovery of System ANA (on cishanar08)	
ecovery Progress Inf	ormation	
Prepare Recovery - S	Stopping System	
Host: cishanar10		
Recovery of host 1	cishanar10' pending	
Name Server	Process running but state unknown	
Host: cishanar11		
Becovery of host *	cishanar11° pending	
Name Server	Process running but state unknown	
Host: cishanar08		
Recovery of host 1	cishanar08' pending	
Daemon Process	🛆 Initializing	
Name Server	B Running	
Index Server	🛆 Initializing	
Statistics Server	🛆 Initializing	
XSEngine	🛆 initializing	
Preprocessor	B Running	
Cancell Recovery		
-		
3	Oose	

19. 恢复过程完成后,根据需要恢复 SnapVault 关系。

overy Execution Summ	ry Execution Summary	
System ANA recovere	ed.	
12 volumes were recover	ed	
Recovered to Time:	Apr 7, 2014 10:29:57 PM GMT-07:00	
Recovered to Log Positio	n 31080960	

## 还原后恢复 SnapVault 关系

如果未使用最新的 Snapshot 备份执行任何还原,则会删除主存储系统上的 SnapVault 关

还原和恢复过程完成后,必须恢复 SnapVault 关系,以便可以使用 Snap Creator 再次执行备份。否则, Snap Creator 将问题描述显示一条错误消息,因为它在主存储系统上找不到 SnapVault 关系。

如果源卷和目标卷之间仍存在通用 Snapshot 副本,则所需的数据传输将基于增量传输。

### 恢复与 7- 模式 Data ONTAP 的 SnapVault 关系

如果使用最新的 Snapshot 备份以外的 Snapshot 备份进行还原,则需要恢复 SnapVault 关系,以便 Snap Creator 可以继续运行备份。

1. 输入以下命令,恢复与 7- 模式 Data ONTAP 的 SnapVault 关系。SnapVault start -r -S source\_controller : source\_volumebackup\_controller : backup\_volume

对属于 SAP HANA 数据库的所有卷执行此步骤。

hana2b> snapvault start -r -S hanala:/vol/data\_00001/mnt00001 hana2b:/vol/backup\_data\_00001/mnt00001 The resync base snapshot will be: Backup-ANA-SV\_daily\_20140406200000 Resync may alter the data in this qtree. Are you sure you want to resync the qtree? y Mon Apr 7 14:08:21 CEST [hana2b:replication.dst.resync.success:notice]: SnapVault resync of /vol/backup\_data\_00001/mnt00001 to hanala:/vol/data\_00001/mnt00001 was successful. Transfer started. Monitor progress with 'snapvault status' or the snapmirror log.

```
hana2b> snapvault start -r -S hana1b:/vol/data_00002/mnt00002
hana2b:/vol/backup_data_00002/mnt00002
The resync base snapshot will be: Backup-ANA-SV_daily_20140406200000
Resync may alter the data in this qtree.
Are you sure you want to resync the qtree? y
Mon Apr 7 14:09:49 CEST [hana2b:replication.dst.resync.success:notice]:
SnapVault resync of
/vol/backup_data_00002/mnt00002 to hana1b:/vol/data_00002/mnt00002 was
successful.
Transfer started.
Monitor progress with 'snapvault status' or the snapmirror log.
```

hana2b> snapvault start -r -S hanala:/vol/data\_00003/mnt00003 hana2b:/vol/backup\_data\_00003/mnt00003 The resync base snapshot will be: Backup-ANA-SV\_daily\_20140406200000 Resync may alter the data in this qtree. Are you sure you want to resync the qtree? y Mon Apr 7 14:10:25 CEST [hana2b:replication.dst.resync.success:notice]: SnapVault resync of /vol/backup\_data\_00003/mnt00003 to hanala:/vol/data\_00003/mnt00003 was successful. Transfer started. Monitor progress with 'snapvault status' or the snapmirror log.

数据传输完成后,您可以再次使用 Snap Creator 计划备份。

### 恢复与集群模式 Data ONTAP 的 SnapVault 关系

如果使用最新的 Snapshot 备份以外的 Snapshot 备份进行还原,则需要恢复 SnapVault 关系,以便 Snap Creator 可以继续运行备份。

1. 重新创建并重新同步 SnapVault 关系。

```
hana::> snapmirror create -source-path hanala:hana_data -destination
-path
hana2b:backup_hana_data -type XDP
Operation succeeded: snapmirror create the relationship with destination
hana2b:backup_hana_data.
hana::> snapmirror resync -destination-path hana2b:backup_hana_data
-type XDP
Warning: All data newer than Snapshot copy sc-backup-
daily_20140430121000 on volume
hana2b:backup_hana_data will be deleted.
Do you want to continue? {y|n}: y
[Job 6554] Job is queued: initiate snapmirror resync to destination
"hana2b:backup_hana_data".
[Job 6554] Job succeeded: SnapMirror Resync Transfer Queued
```

2. 要实际重新启动 SnapVault 传输,需要手动创建 Snapshot 副本。

```
hana::> snapshot create -vserver hanala -volume hana_data -snapshot
sv_resync
hana::> snapshot modify -vserver hanala -volume hana_data -snapshot
sv_resync -snapmirror-label daily
hana::> snapmirror update -destination-path hana2b:backup_hana_data
Operation is queued: snapmirror update of destination
hana2b:backup_hana_data.
```

3. 验证 SnapVault 关系是否显示在目标列表中。

hana::> snapmirror list-destinations -source-path hanala:hana data Progress Source Destination Transfer Last Relationship Type Path Status Progress Updated Id Path \_\_\_\_\_ \_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ hanala:hana data XDP hana2b:backup hana data Transferring 38.46KB 04/30 18:15:54 9137fb83cba9-11e3-85d7-123478563412

### 在主存储发生故障后还原数据库

在主存储发生故障或从主存储的卷中删除所有 Snapshot 副本后, Snap Creator 将无法处理还原,因为主存储系统上将不再存在 SnapVault 关系。

### 使用在 7- 模式下运行的 Data ONTAP 在主存储发生故障后还原数据库

在运行 7- 模式 Data ONTAP 的主存储系统出现故障后,您可以还原 SAP HANA 数据库。

1. 在这种情况下,必须使用以下命令在二级存储系统上直接执行还原: SnapVault restore -s snapshot\_name -S backup\_controller: backup\_volumesource\_controller: source\_volume

对属于 SAP HANA 数据库的所有卷执行此步骤。

hanala> snapvault restore -s Backup-ANA-SV\_hourly\_20140410103943 -S hana2b:/vol/backup\_data\_00001/mnt00001 hanala:/vol/data\_00001/mnt00001 Restore will overwrite existing data in /vol/data\_00001/mnt00001. Are you sure you want to continue? y Thu Apr 10 11:55:55 CEST [hanala:vdisk.qtreePreserveComplete:info]: Qtree preserve is complete for /vol/data\_00001/mnt00001. Transfer started. Monitor progress with 'snapvault status' or the snapmirror log.

hanala> snapvault restore -s Backup-ANA-SV\_hourly\_20140410103943 -S hana2b:/vol/backup\_data\_00003/mnt00003 hanala:/vol/data\_00003/mnt00003 Restore will overwrite existing data in /vol/data\_00003/mnt00003. Are you sure you want to continue? y Thu Apr 10 11:58:18 CEST [hanala:vdisk.qtreePreserveComplete:info]: Qtree preserve is complete for /vol/data\_00003/mnt00003. Transfer started. Monitor progress with 'snapvault status' or the snapmirror log.

hanalb> snapvault restore -s Backup-ANA-SV\_hourly\_20140410103943 -S hana2b:/vol/backup\_data\_00002/mnt00002 hanalb:/vol/data\_00002/mnt00002 Restore will overwrite existing data in /vol/data\_00002/mnt00002. Are you sure you want to continue? y Thu Apr 10 12:01:29 CEST [hanalb:vdisk.qtreePreserveComplete:info]: Qtree preserve is complete for /vol/data\_00002/mnt00002. Transfer started. Monitor progress with 'snapvault status' or the snapmirror log.

还原过程完成后,您可以使用 SAP HANA 执行恢复。

#### 使用集群模式 Data ONTAP 在主存储发生故障后还原数据库

您可以在运行集群模式 Data ONTAP 的主存储系统出现故障后还原 SAP HANA 数据库。

假设主卷完全丢失,您需要创建一个新的主卷,然后从备份卷进行还原。

1. 创建类型为数据保护的主卷。

hana::> volume create -vserver hanala -volume hana\_data -aggregate
aggr\_sas\_101 -size 300G -state online -type DP -policy default -autosize
-mode grow\_shrink -space-guarantee none
-snapshot-policy none -foreground true
[Job 6744] Job is queued: Create hana\_data.
[Job 6744] Job succeeded: Successful

2. 从备份卷还原所有数据。

hana::> snapmirror restore -destination-path hanala:hana data -source -path hana2b:backup hana data -source-snapshot sc-backupdaily 20140505121000 [Job 6746] Job is queued: snapmirror restore from source "hana2b:backup hana data" for the snapshot sc-backup-daily 20140505121000. hana::> job show -id 6746 Owning Job ID Name Vserver Node State \_\_\_\_\_ \_\_ 6746 SnapMirror restore hana hana01 Running Description: snapmirror restore from source "hana2b:backup hana data" for the snapshot sc-backupdaily 20140505121000

还原过程完成后,您可以使用 SAP HANA 执行恢复。

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